

EG&G ROCKY FLATS
NEPA COMPLIANCE COMMITTEE
ENVIRONMENTAL CHECKLIST REVIEW FORM

EC Number: EC 8992

EC Date: September 9, 1992

Project Name: OUs 12, 14 and 15 Site Characterization Field Work

Authorization or EJO#: 986481 (OU 12)
986484 (OU 14)
986520 (OU 15)

Project PA:

Initiating Line Manager: Greg Anderson (OU 12)
Charlie Hayes (OU 14)
Dennis Shubbe (OU 15)

NEPA compliance Committee Review (Sign & date applicable space):

| | CX Recommended | Date | ADM Recommended |
|-------------------|----------------------|---------------|-----------------|
| Environ. Doc.: | <u>Claire Rero</u> | <u>9/9/92</u> | _____ |
| Fac. Proj. Mgmt: | <u>[Signature]</u> | <u>9/9/92</u> | _____ |
| General Counsel: | <u>[Signature]</u> | <u>9/9/92</u> | _____ |
| Fac. Safety Eng.: | <u>Sandra A. Day</u> | <u>9/9/92</u> | _____ |
| Comments: | | | |

CEQ Section 1506.1(c) Review:

Yes

No

1. Project justified independently X
2. Project will prejudice program decision X

10 CFR 1022 Review (wetlands issue) needed:

X

NCC Recommendation: X CX recommended.

_____ ADM recommended

END Mgr. Approval/Date: [Signature] 9/21/92

ROCKY FLATS PLANT

ECOLOGY & NATIONAL ENVIRONMENTAL POLICY ACT DIVISION ENVIRONMENTAL CHECKLIST

EC 8992

Charge numbers: 986481 (OU 12), 986484 (OU 14), 986520 (OU 15)

- I. Date: September 9, 1992
- II. Activity/Project Name: Site Characterization Field Work at OUs 12, 14 and 15
- III. Authorization/Project Numbers: 986481 (OU 12)
986484 (OU 14)
986520 (OU 15)
- IV. A. EG&G Project Administrator: N/A
- B. ADS Number (E&WM only): 1007A (OU 12)
1010A (OU 14)
1018 (OU 15)
- C. DOE Program Sponsor: James K. Hartman
- V. Initiating Line Manager: Gregg Anderson (OU 12)
Charlie Hayes (OU 14)
Dennis Shubbe (OU 15)
- VI. A. Project/Activity Description :

Operable Units (OUs) 12 (400/800 Areas), 14 (Radioactive Sites) and 15 (Inside Building Closures) are scheduled in the InterAgency Agreement (IAG) to undergo site characterization field work starting in the late fall of 1992 (OUs 12 and 14) and early spring of 1993 (OU 15). All three OUs are located entirely within the Security Controlled Area of the Plant. (Continued on next page)

Reviewed For Classification /UCND

By

L. R. Stahl

Date

9/15/92 UNY

OU 12

OU 12 is the 400 and 800 Areas, shown in Figure 1. The OU is entirely in the Security Controlled Area, the developed portion of RFP that is occupied by buildings, paved areas, utilities and other features that have significantly disturbed the natural environment. The OU consists of 10 individual hazardous substance sites (IHSSs): 116.1, and 116.2 (multiple solvent spills at the west and south loading dock areas of Building 444), 120.1 and 120.2 (fiberglassing areas north and west of Building 664), 136.1 and 136.2 (backfilled cooling tower ponds southwest, east and northwest of Building 444), 147.2 (process waste leak site northeast of Building 881), 157.2 (an area of radioactive contamination around Building 444), 187 (acid leaks in an area north of Building 444) and 189 (a storage yard in which there were multiple acid spills, northeast of Building 444). Because of their varied histories, field work will be different in each IHSS.

Figures 2 through 11 show the types of field work planned for each IHSS and the locations of each field activity. The maps show that OU 12 field work will include:

- surficial soil or soil profile samples at 82 locations,
- soil gas surveys at 135 locations,
- soil borings at 20 locations,
- monitoring wells at 3 locations,
- sediment samples at 12 locations,
- hydraulic probes at 25 locations,
- radiological surveys at 43 locations.

Each of these types of activities is described in the "Field Sampling Methods" section below. In many instances, more than one type of field work will occur at a single location.

Site characterization activities at OU 12 are expected to start in the fourth quarter of 1992 and continue into the fourth quarter of 1993.

OU 14

OU 14 consists of eight IHSSs (131, 156.1, 160, 161, 162, 164.1, 164.2 and 164.3) in the south and west areas of the plant site. Each of the IHSSs is shown in Figure 12. IHSS 131, which is difficult to see on the map, is located in the northwest corner of Building 776, just east of the north end of the long narrow IHSS. Of the eight IHSSs, two are parking lots containing 313,000 square feet, four are paved areas near building including 82,000 square feet, one is a storage pad of 25,000 square feet, and the eighth is a paved road covering 161,000 square feet. Like the OU 12 IHSSs, all of these IHSSs are within the Security Controlled Area.

EXPLANATION

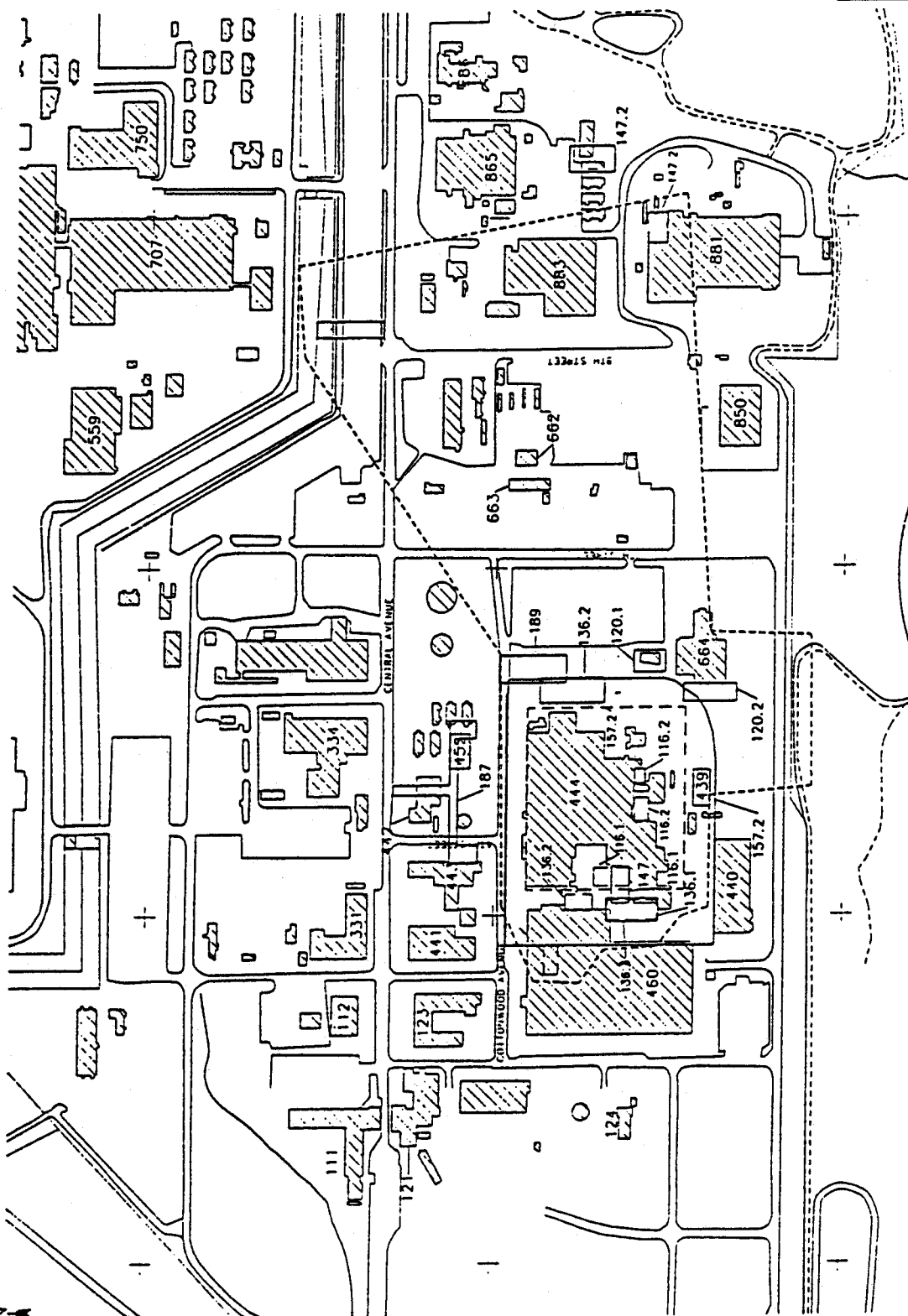
--- OUI2 BOUNDARY

--- IHSS BOUNDARY

--- PREVIOUS IHSS BOUNDARY

KEY TO IHSS LOCATIONS

- 116.1 WEST LOADING DOCK, BUILDING 447
- 116.2 SOUTH LOADING DOCK, BUILDING 444
- 136.1 COOLING TOWER POND WEST OF BUILDING 444
- 136.2 COOLING TOWER POND EAST OF BUILDING 444
- 157.2 RADIOACTIVE SITE SOUTH AREA
- 187 SULFURIC ACID SPILL FIBERGLASSING AREA NORTH OF BUILDING 664
- 120.2 FIBERGLASSING AREA WEST OF BUILDING 664
- 189 NITRIC ACID TANKS
- 147.1 PROCESS WASTE LINE LEAKS
- 147.2 BUILDING 881 CONVERSION ACTIVITY

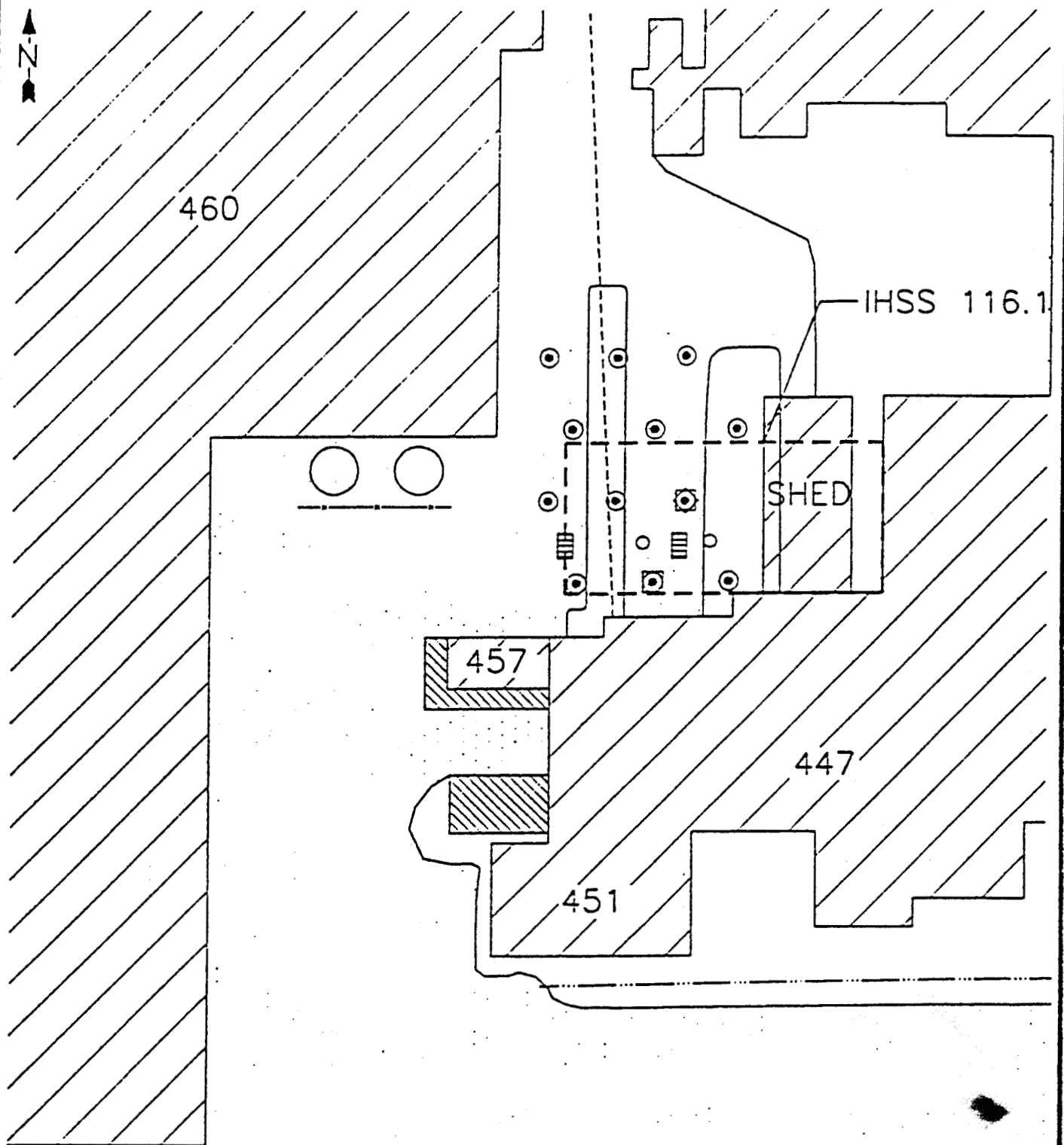


1" = 300 FEET

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GOLDEN, COLORADO

Figure 1
LOCATION OF
INDIVIDUAL HAZARDOUS
SUBSTANCE SITES IN OUI2



EXPLANATION

- BUILDING
- PAVEMENT
- CONCRETE
- SOIL OR GRAVEL
- IHSS BOUNDARY
- OVERHEAD PIPING

- DRAIN
- DRAINAGE
- SURFICIAL SOIL SAMPLING LOCATION
- SOIL GAS SURVEY LOCATION
- SOIL BORING LOCATION (TENTATIVE)
- MONITORING WELL LOCATION (TENTATIVE)

25 0 25 50 FEET

NOTE: LOCATION OF PHYSICAL SITE FEATURES ARE APPROXIMATE

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Figure 2
FIELD SAMPLING PLAN FOR
IHSS 116.1 - WEST
LOADING DOCK BUILDING 447



REVISION NO. 0

FILE NAME 40103\F01-602.DWG

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EXPLANATION



BUILDING



IHSS BOUNDARY



DRAINAGE



PAVEMENT



CONCRETE



SOIL OR GRAVEL



WATER HYDRANT

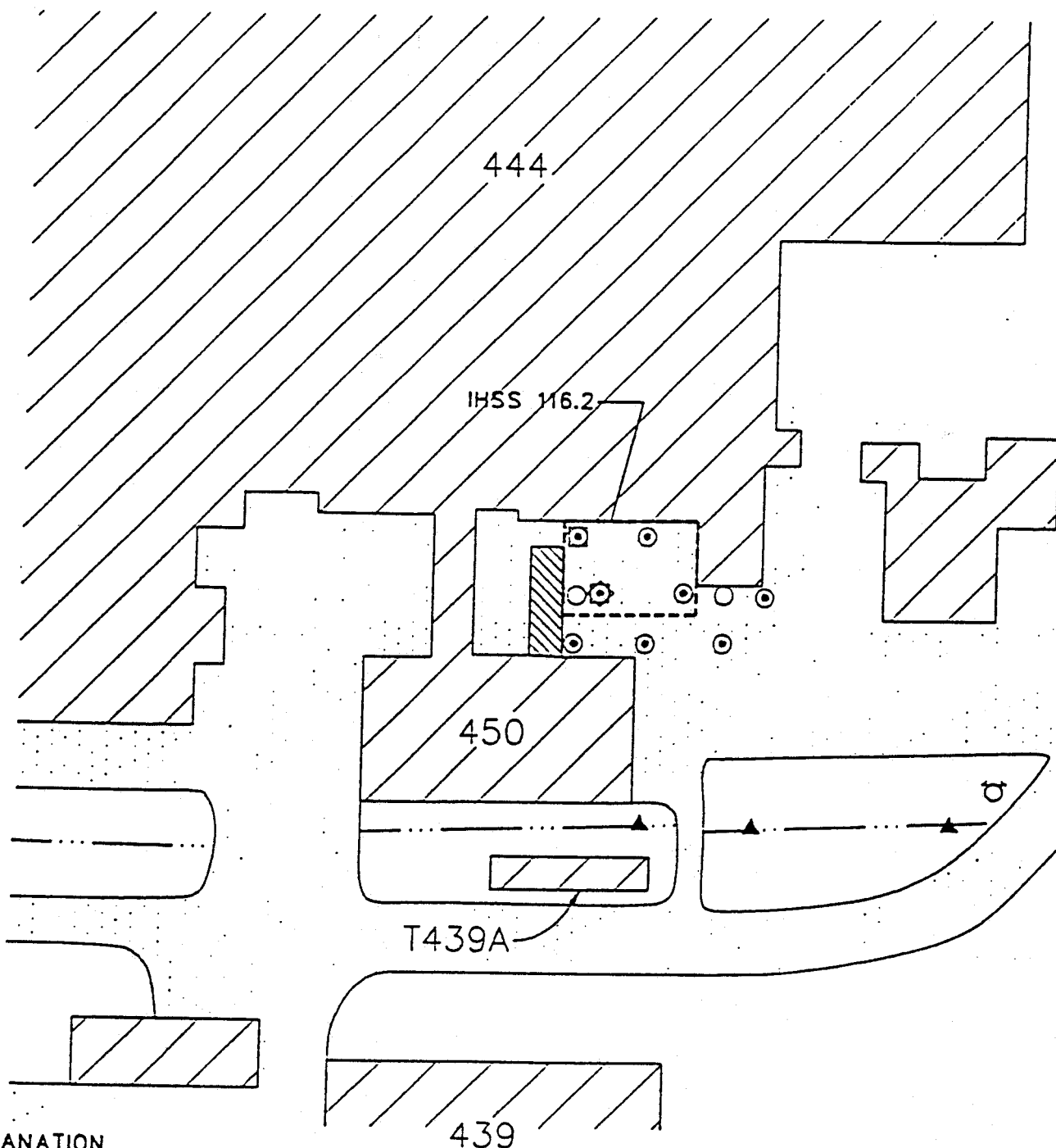
- SURFICIAL SOIL SAMPLING LOCATION
- SOIL GAS SURVEY LOCATION
- SOIL BORING LOCATION (TENTATIVE)
- ◇ MONITORING WELL LOCATION (TENTATIVE)
- ▲ SEDIMENT SAMPLE LOCATION

25 0 25 50 FEET

NOTE: LOCATION OF PHYSICAL SITE FEATURES ARE APPROXIMATE

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Figure 3
FIELD SAMPLING PLAN FOR
IHSS 116.2 - SOUTH
LOADING DOCK BUILDING 444



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460

444

457

447

451

IHSS 136.1

EXPLANATION



BUILDING



PAVEMENT



CONCRETE



SOIL OR GRAVEL



IHSS BOUNDARY



OVERHEAD PIPING



DRAIN

DRAINAGE

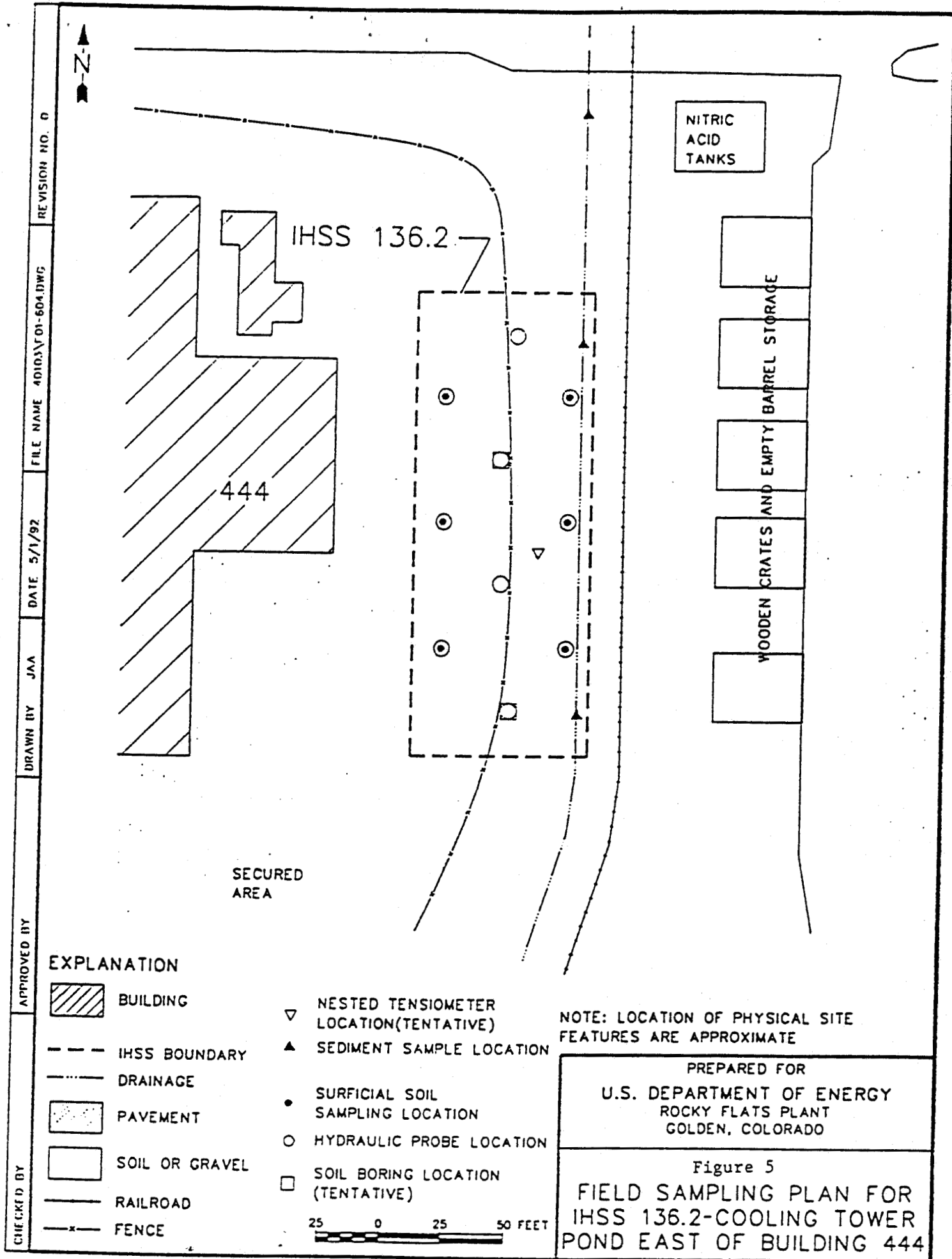
- SURFICIAL SOIL SAMPLING LOCATION
- HYDRAULIC PROBE LOCATION
- SOIL BORING LOCATION (TENTATIVE)

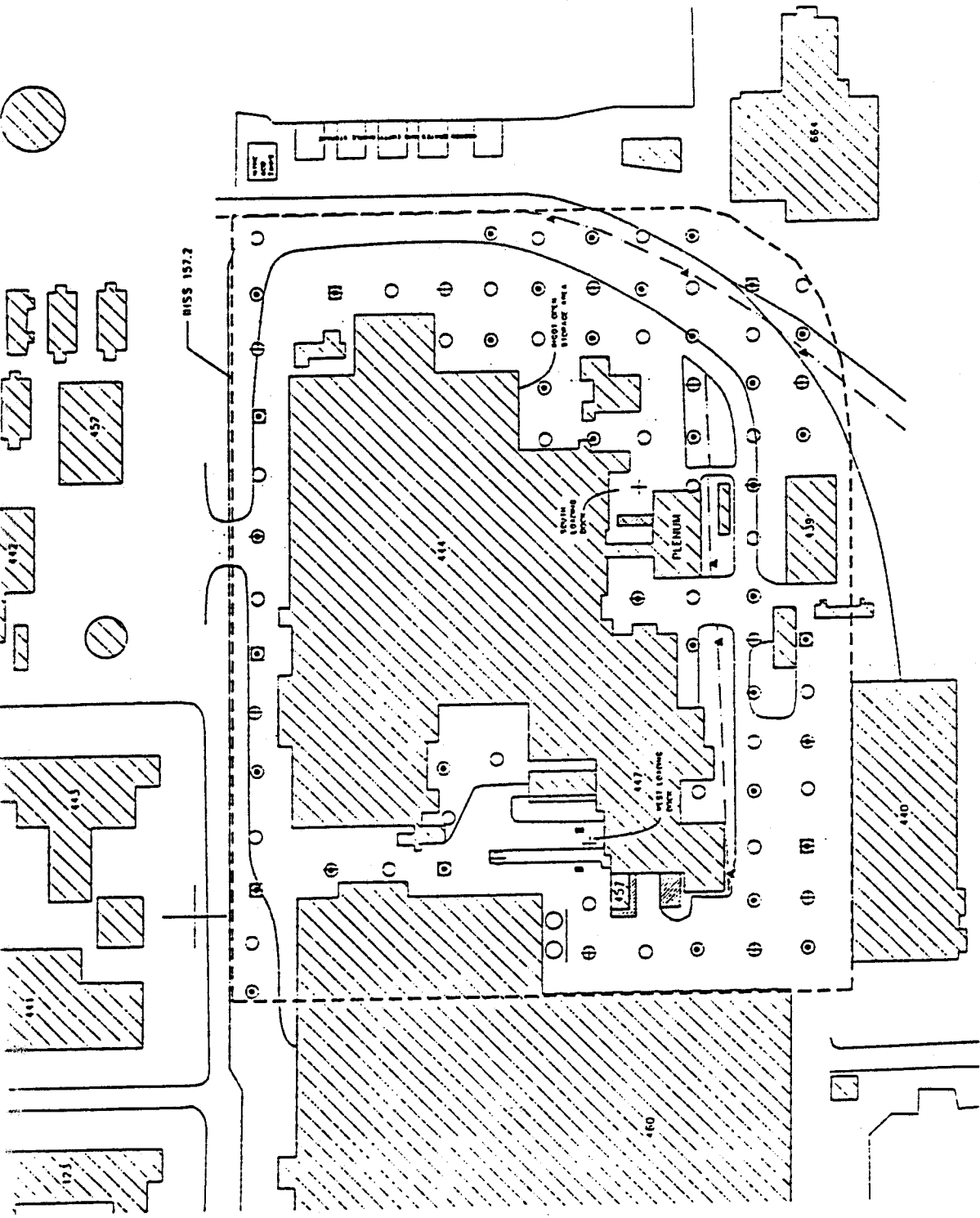
NOTE: LOCATION OF PHYSICAL SITE FEATURES ARE APPROXIMATE

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Figure 4
FIELD SAMPLING PLAN FOR
IHSS 136.1 - COOLING TOWER
POND WEST OF BUILDING 444

25 0 25 50 FEET



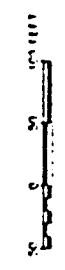


EXPLANATION

- BOUNDARY
- DRAINAGE
- PAVEMENT
- CONCRETE
- SOIL ON GRAVEL
- PARKING
- FENCE

- A SEDIMENT SAMPLE LOCATION
- SUPERFICIAL SOIL SAMPLING LOCATION
- (1) SOIL GAS SURVEY LOCATION
- (1) SOIL BORING LOCATION (TENTATIVE)
- | RADIOLOGICAL SURVEY LOCATION

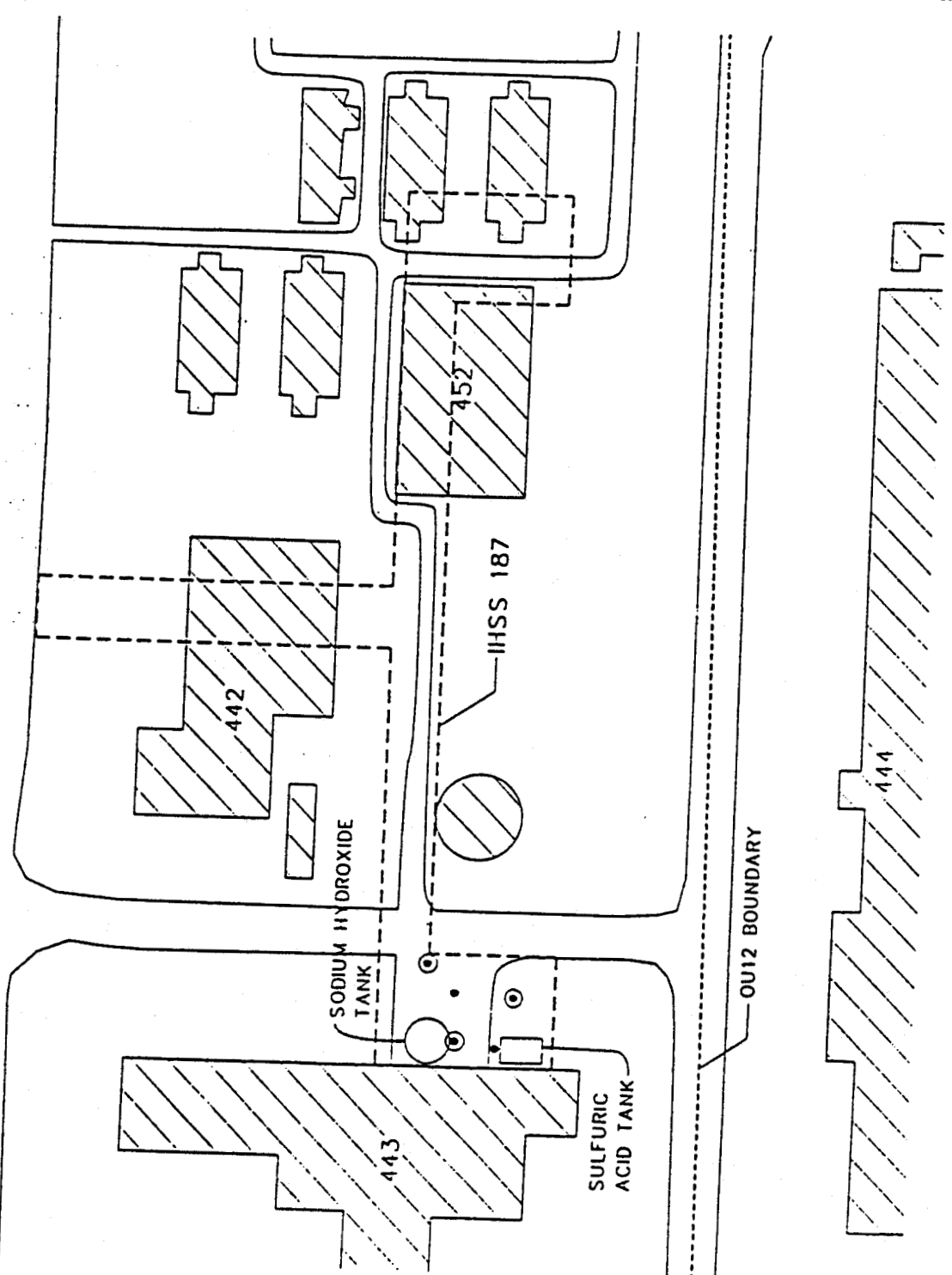
NOTE: LOCATION OF PHYSICAL SITE FEATURES ARE APPROXIMATE



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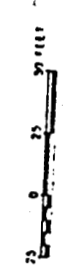
Figure 6
FIELD SAMPLING PLAN FOR
INSS 157.2-RADIOACTIVE
SITE SOUTH AREA

4-2

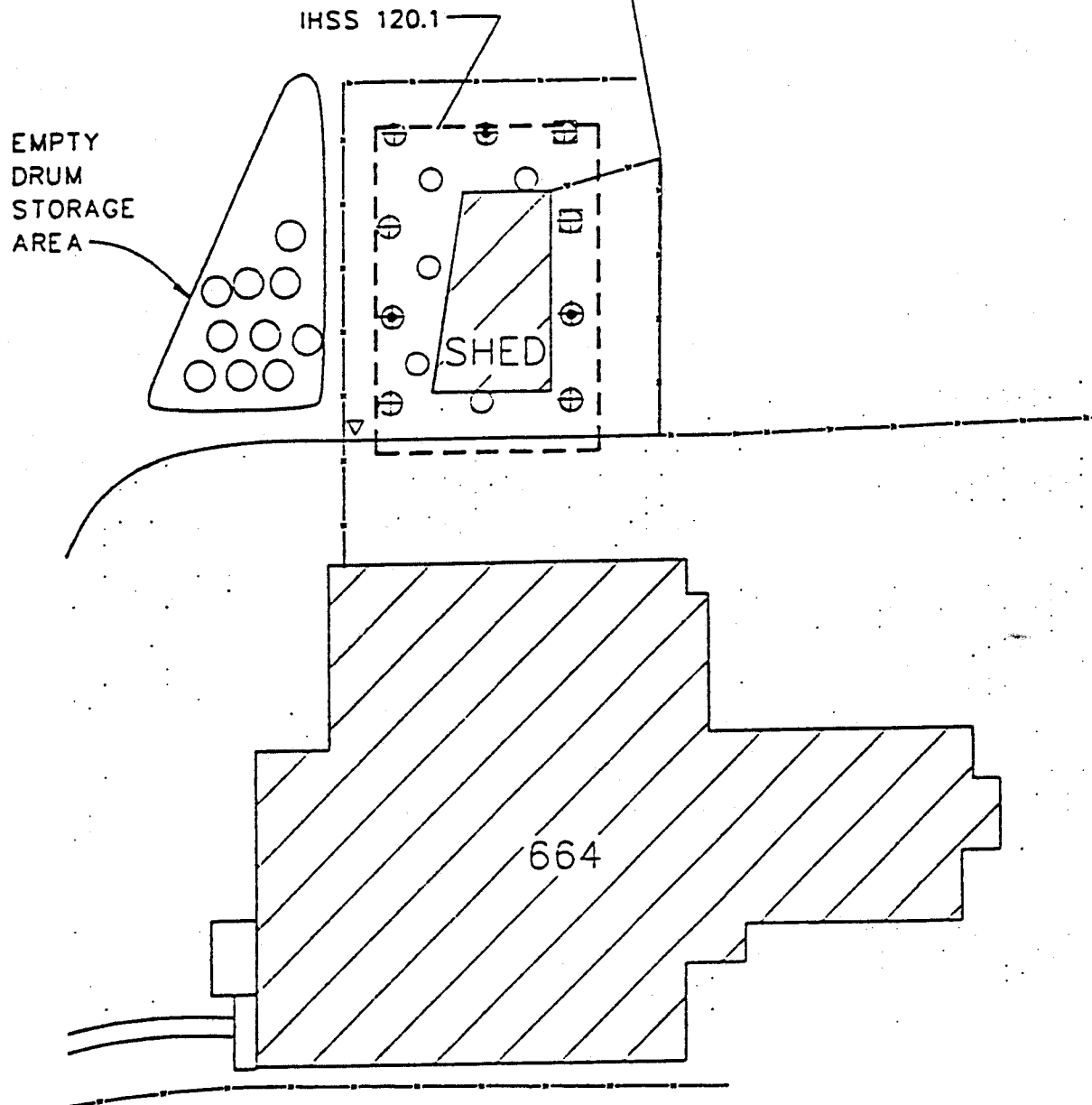


- EXPLANATION
- BUILDING
 - IHSS BOUNDARY
 - OVERHEAD PIPING
 - PAVEMENT
 - SOIL OR GRAVEL
 - SURFICIAL SOIL SAMPLING LOCATION
 - HYDRAULIC PROBE LOCATION

NOTE: LOCATION OF PHYSICAL SITE FEATURES ARE APPROXIMATE



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Figure 7
FIELD SAMPLING PLAN FOR
IHSS 187
SULFURIC ACID SPILL



EXPLANATION



BUILDING

--- IHSS BOUNDARY



PAVEMENT



SOIL OR GRAVEL

— RAILROAD

-x- FENCE

▽ NESTED TENSIOMETER LOCATION (TENTATIVE)

• SURFICIAL SOIL/DEPTH PROFILE SAMPLING LOCATION

○ SOIL GAS SURVEY LOCATION

□ SOIL BORING LOCATION (TENTATIVE)

+ RADIOLOGICAL SURVEY LOCATION

25 0 25 50 FEET

NOTE: LOCATION OF PHYSICAL SITE FEATURES ARE APPROXIMATE

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Figure 8
FIELD SAMPLING PLAN FOR
IHSS 120.1-FIBERGLASSING
AREA NORTH OF BUILDING 664



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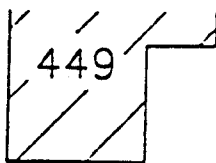
FILE NAME 40103\01-608 DWG

DATE 5/4/92

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SECURED
AREA



IHSS 120.2

664

EXPLANATION



BUILDING

--- IHSS BOUNDARY
- - - DRAINAGE



PAVEMENT



SOIL OR GRAVEL

— RAILROAD

-x- FENCE

• SURFICIAL SOIL/DEPTH
PROFILE SAMPLING LOCATION

○ SOIL GAS SURVEY LOCATION

□ SOIL BORING LOCATION
(TENTATIVE)

+ RADIOLOGICAL SURVEY
LOCATION

25 0 25 50 FEET

NOTE: LOCATION OF PHYSICAL SITE
FEATURES ARE APPROXIMATE

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GOLDEN, COLORADO

Figure 9
FIELD SAMPLING PLAN FOR
IHSS 120.2-FIBERGLASSING
AREA WEST OF BUILDING 664

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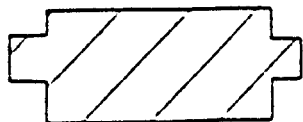
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DATE: 5/1/92

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CHECKED BY:



COTTONWOOD STREET

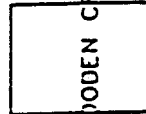
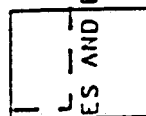
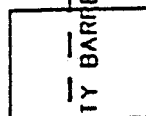
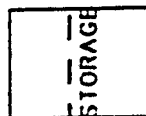
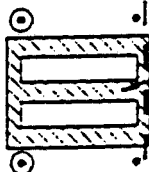
IHSS 189

NITRIC ACID TANKS



444

SECURED AREA



WOODEN CRATES AND EMPTY BARREL STORAGE

EXPLANATION



BUILDING



IHSS BOUNDARY



DRAINAGE



PAVEMENT



SOIL OR GRAVEL



RAILROAD



FENCE



CONCRETE

- SURFICIAL SOIL SAMPLING LOCATION
- HYDRAULIC PROBE LOCATION

NOTE: LOCATION OF PHYSICAL SITE FEATURES ARE APPROXIMATE

25 0 25 50 FEET

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GOLDEN, COLORADO

Figure 10
FIELD SAMPLING PLAN FOR
IHSS 189-NITRIC
ACID TANKS



AREA CONTAINING
STEEL BOXES HOLDING
DEPLETED URANIUM

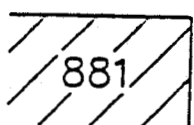
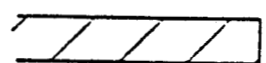
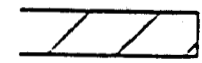
FENCED AREA
CONTAINING
WOODEN PACKING
CRATES, EMPTY
BARRELS, AND
MISC. EQUIPMENT

IHSS 147.2

TRAILER

TRAILER

TRAILER



881

EXPLANATION



BUILDING



IHSS BOUNDARY



PAVEMENT



SOIL OR GRAVEL



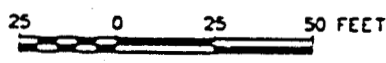
FENCE



SURFICIAL SOIL/DEPTH
PROFILE SAMPLING LOCATION



RADIOLOGICAL SURVEY



NOTE: LOCATION OF PHYSICAL SITE
FEATURES ARE APPROXIMATE

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Figure 11
FIELD SAMPLING PLAN FOR
IHSS 147.2-BUILDING 881
CONVERSION ACTIVITY

REVISION NO. 0

FILE NAME 40103\01-611.DWG

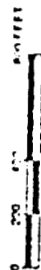
DATE 5/1/92

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APPROVED BY

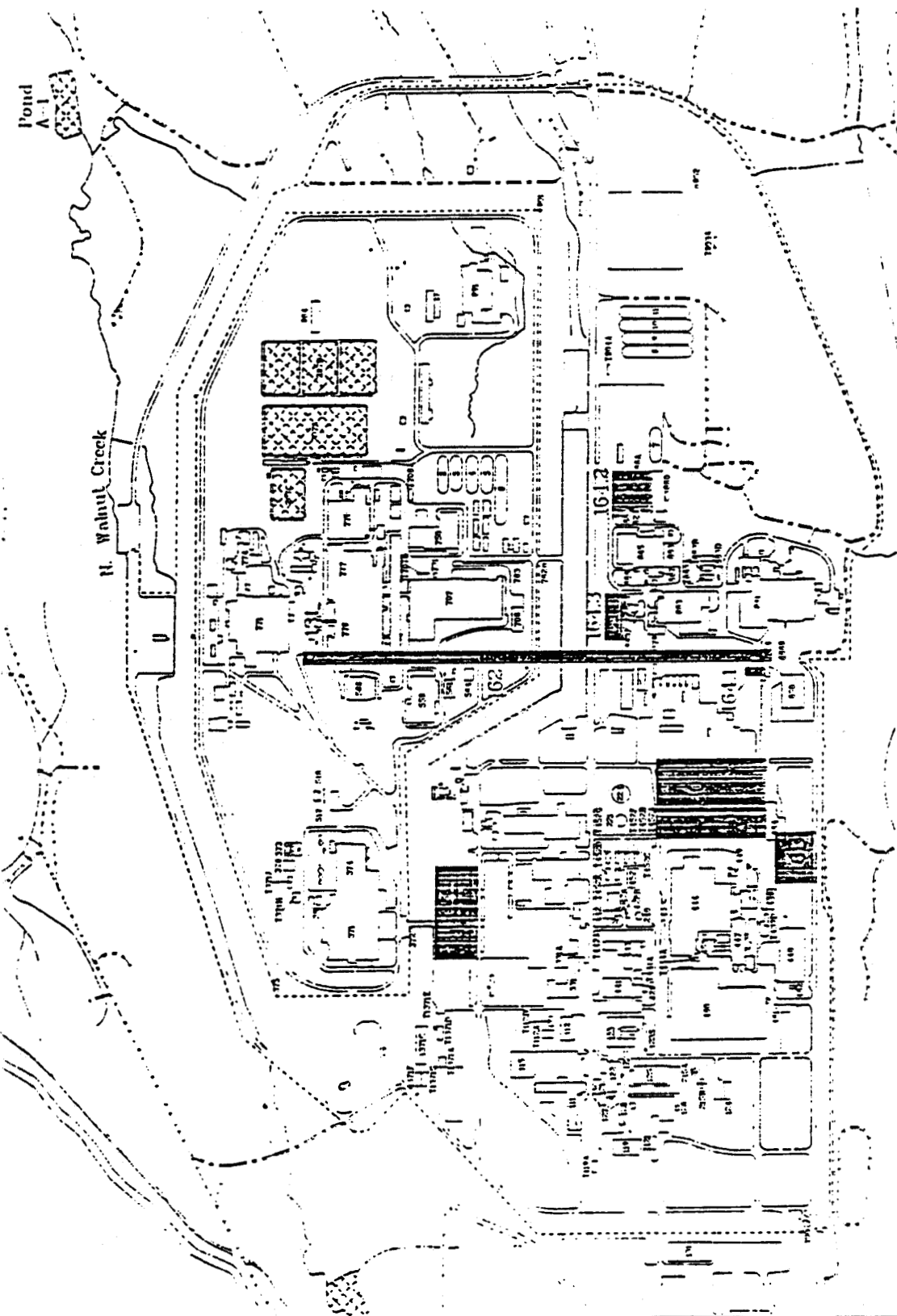
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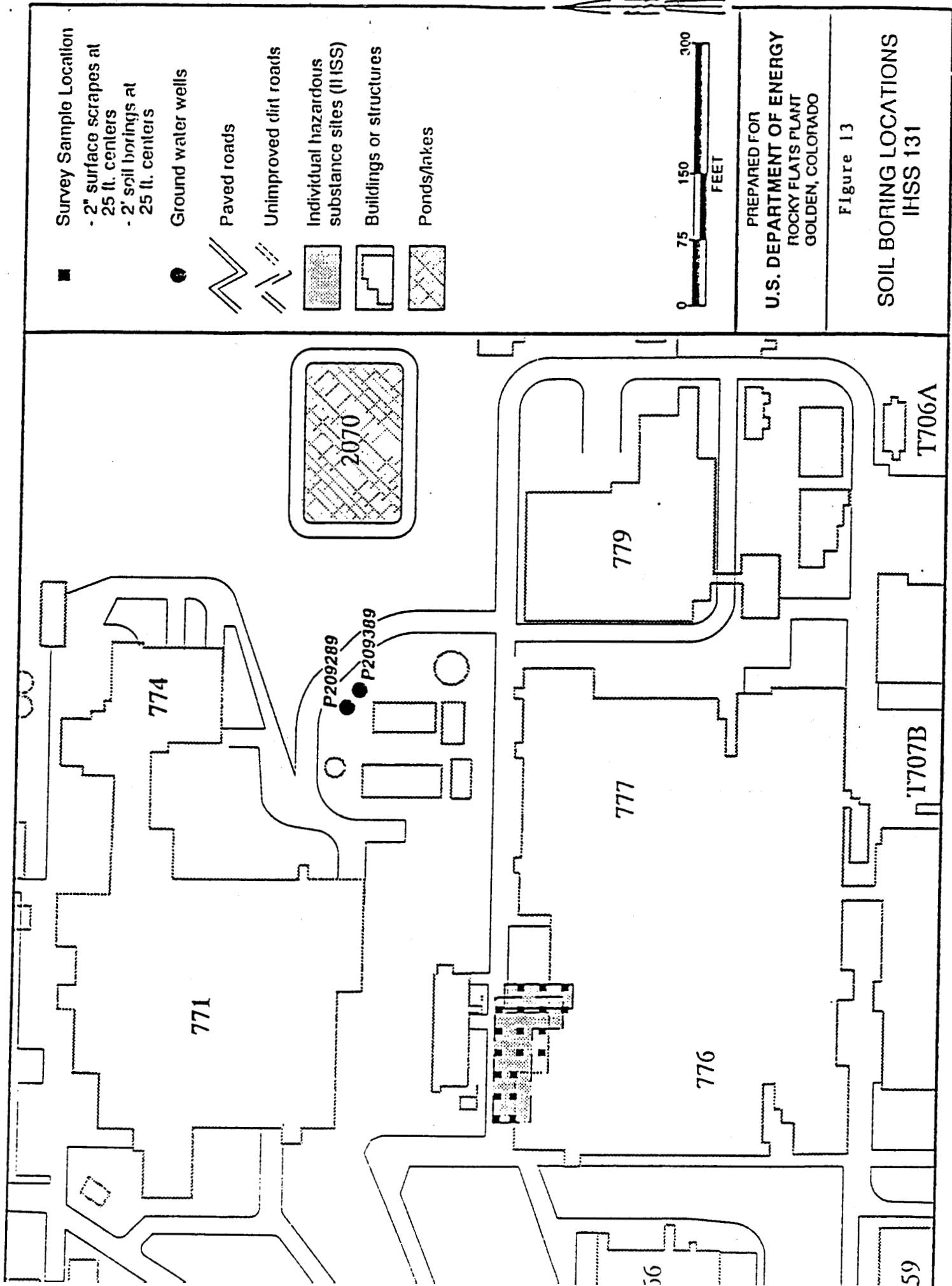
- Solid recth
- Unimproved dirt recth
- Slitting, filling, and other drainage features
- Security fence
- Fence/pole
- Railroad or pipeline
- Highway or road
- Water body



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GOLDEN, COLORADO

Figure 17
COMPREHENSIVE OVERVIEW
OF THE OU14 SITE





Survey Sample Location

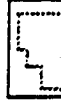
- FIDLER at 25 ft. centers
- 6" borehole at 25 ft. centers
- 2" surface scrapes at 25 ft. centers

Ground water wells

Paved roads

Individual hazardous substance sites (IHSS)

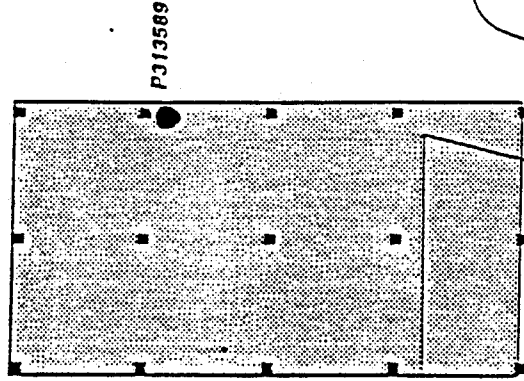
Buildings or structures



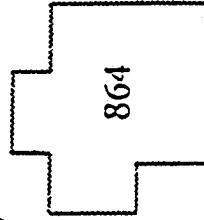
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 GOLDEN, COLORADO

Figure 18

**RADIOLOGICAL
 SURVEY LOCATIONS
 IHSS 164.1**



P313589



864

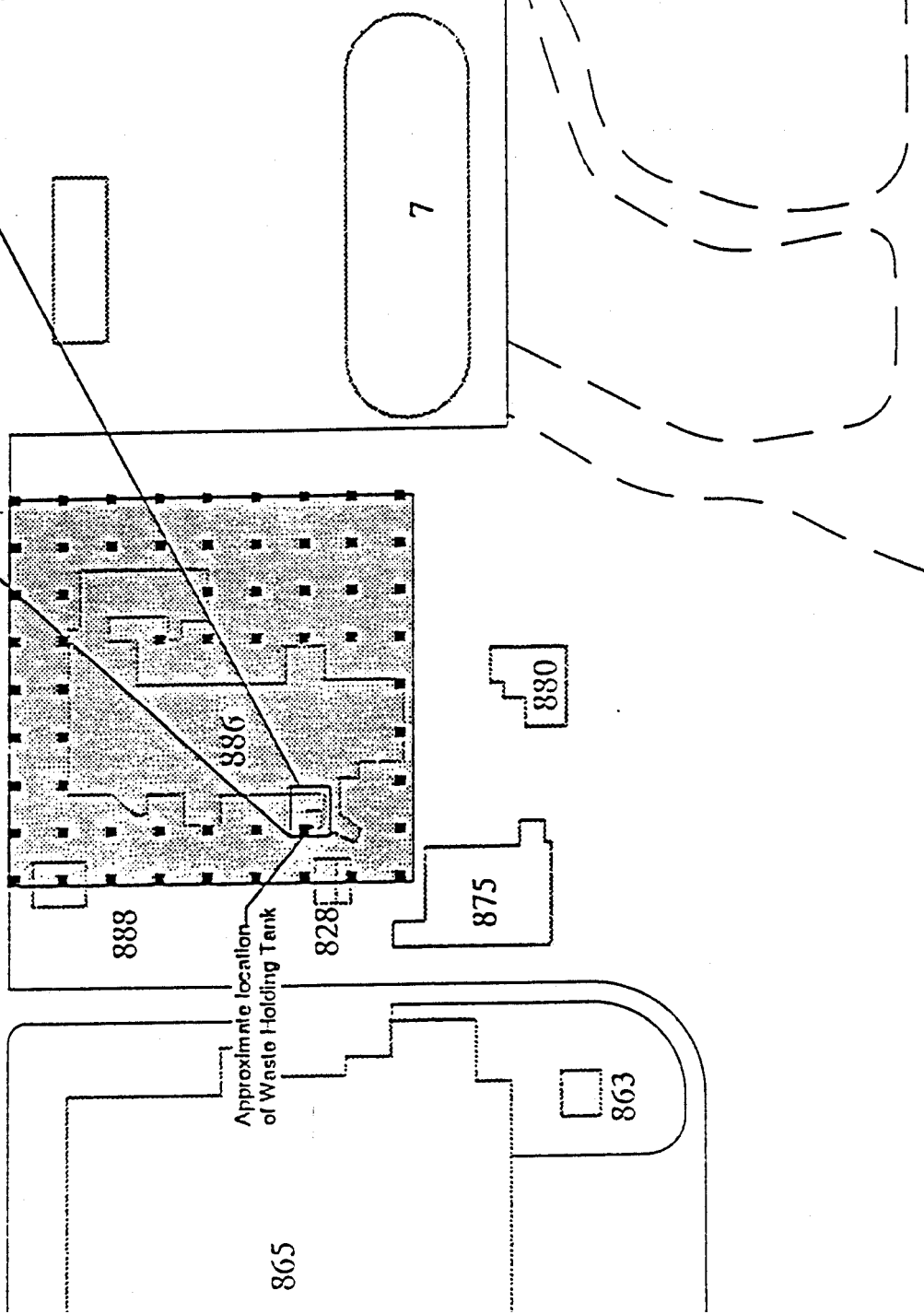
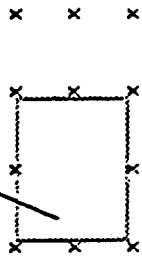


869

850

INSET A

Approximate location
of Waste Holding Tank



- Survey Sample Location
 - 2" surface scrapes at 25 ft. centers
 - 6" borehole at 25' centers
- FIDLER survey at 25' centers

x Concentrated Survey Sample Area at 5' centers. Boreholes drilled to weathered bedrock

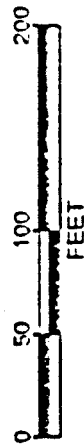
● Ground water wells

== Paved roads

== Unimproved dirt roads

■ Individual hazardous substance sites (IHSS)

■ Buildings or structures



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Figure 19

RADIOLOGICAL SURVEY LOCATIONS IHSS 164.2

- Survey Sample Location
 - 2" surface scrapes at 25 ft. centers
 - 6" borehole at 25' centers
 - FIDLER survey at 25' centers

● Ground water wells



Paved roads



Unimproved dirt roads



Individual hazardous substance sites (IHSS)



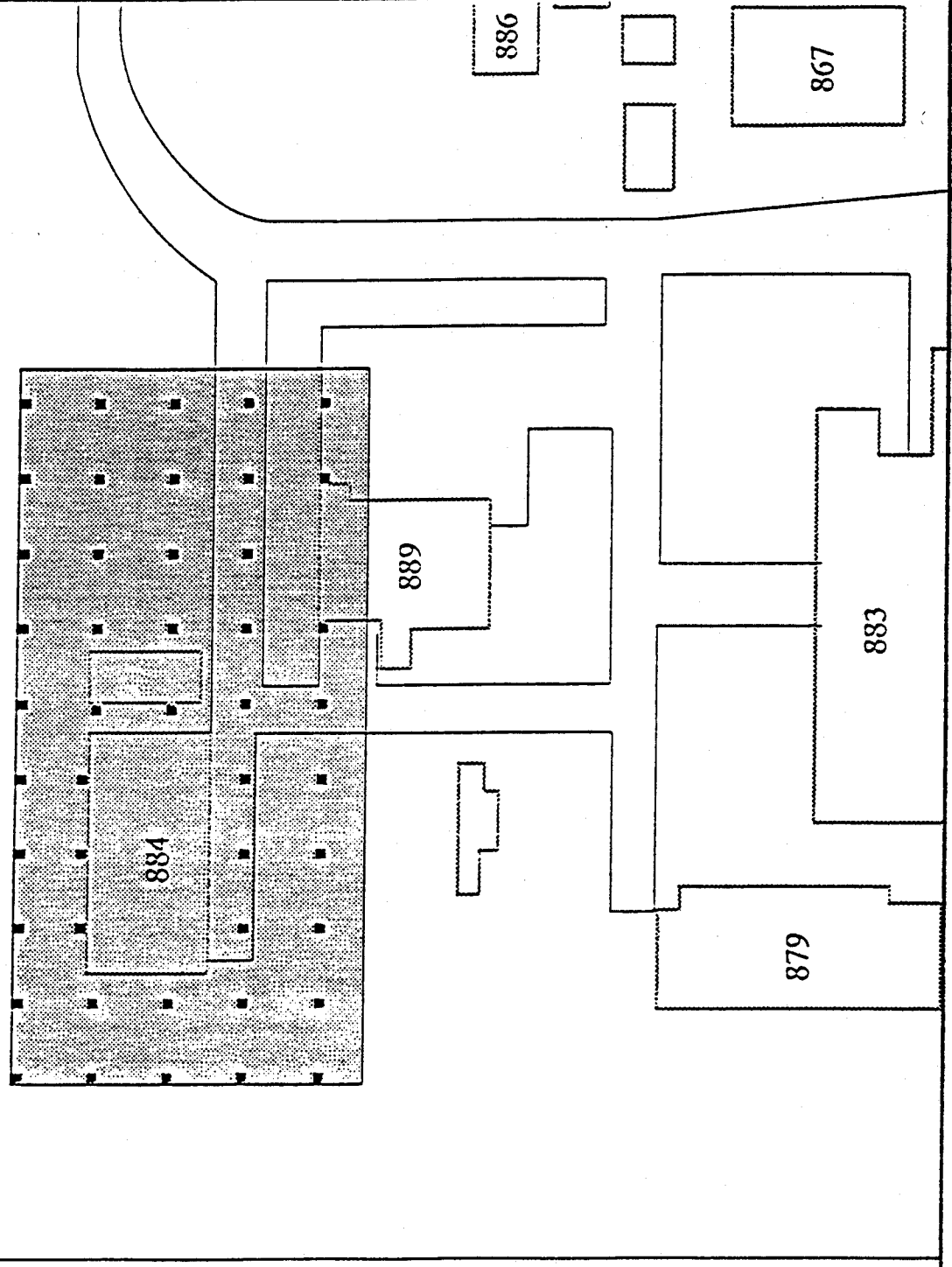
Buildings or structures



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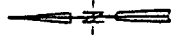
Figure 20

RADIOLOGICAL
SURVEY LOCATIONS
IHSS 164.3



U.S. Department of Energy
Rocky Flats Plant

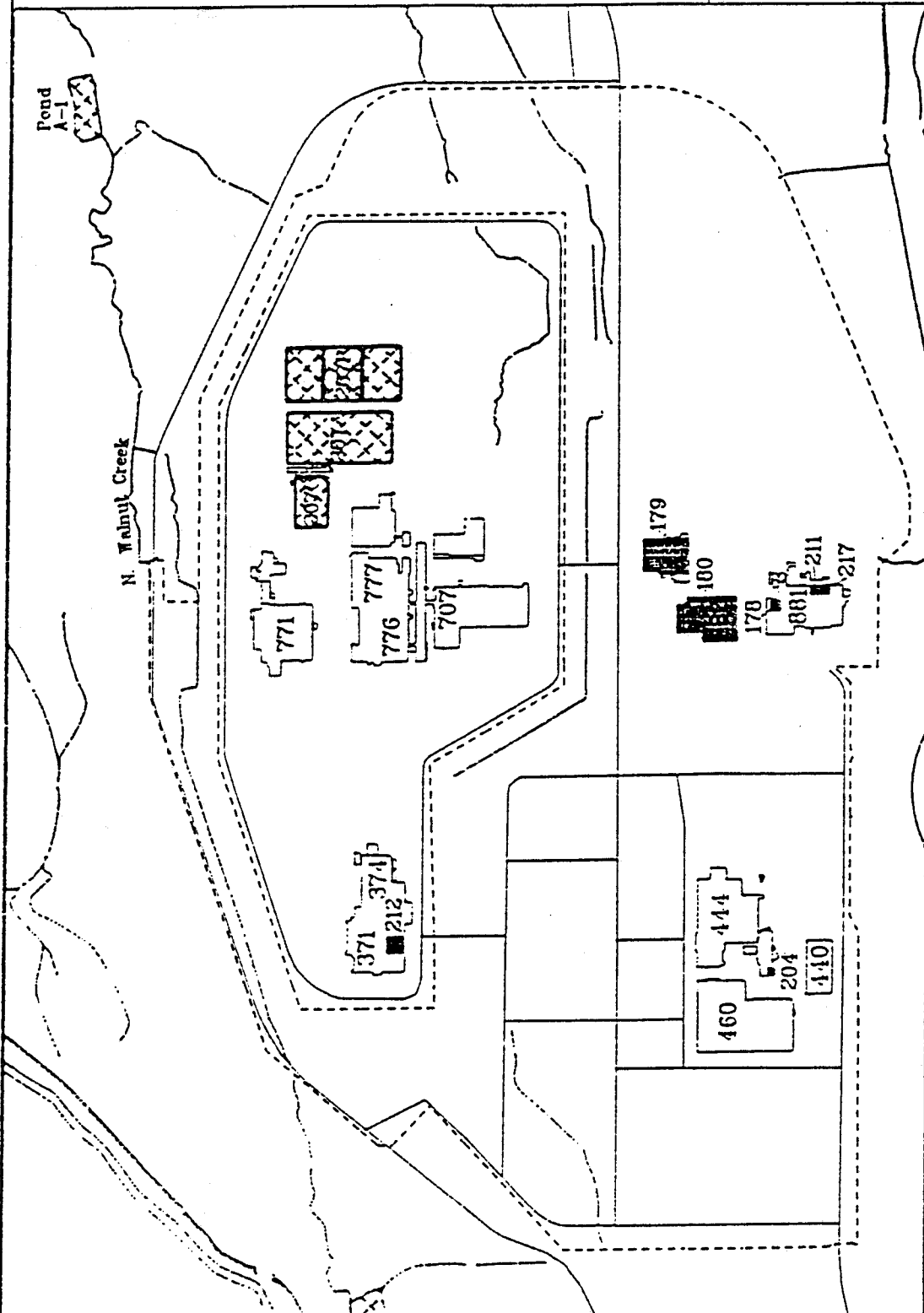
- Paved roads
- Streams, ditches, and other drainage features
- Security fence
- Individual hazardous substance sites (HSS)
- Ponds/lakes
- Buildings or structures



Environmental Restoration
Technical Support Document

Operable Unit 15
Inside Building Closings

Figure 21 Date: 4-30-92



OU 15 field work is expected to start in the second quarter of 1993 and continue through the first quarter of 1994.

Field Sampling Methods

Field sampling activities will be conducted using the following methods:

Surficial soil sampling using a hand-held scoop to collect soil from a depth of two inches on a 50-foot grid.

Other soil sampling with a Kansas Soil Sampler. This device, which may be used if needed, uses a piston to drive the sampler into the soil to a depth of about one-foot. When the sampler is removed, it brings with it a soil core which will be analyzed for volatile organic compounds (VOCs).

Borehole and well drilling. Hollow-stem augers or, if necessary, rotary drills, will be used to drill boreholes while wells will be drilled with conventional augers. Boreholes, typically not more than eight-inches in diameter, will be drilled to determine the geotechnical characteristics of the soil, to further investigate trends identified in earlier tasks, to collect samples for analysis, and to install monitoring wells. Some boreholes drilled to determine geotechnical characteristics of the soil will be drilled to a depth of two-feet and will use a split-spoon sampler to obtain either discrete or composite soil samples. Other boreholes will be drilled to the water table or three-feet into weathered bedrock, whichever is encountered first. All borings not completed as monitoring wells will be grouted and abandoned immediately after drilling to prevent vertical migration of possible contaminants. All drill cuttings and soil samples will be surveyed for radionuclides, VOCs, metals and other contaminants. All such material will be handled in accordance with applicable procedures.

Soil gas surveys using a one-inch diameter stainless steel probe rod driven into the ground by a hydraulic rig mounted on a vehicle. Probes will be driven to a depth of about five feet to collect samples that will be analyzed immediately for VOCs in a mobile lab. Soil gas sampling will generally be done on a 50-foot grid.

Radiological surveys: FIDLER, sodium iodide or HPGe (high purity germanium) system to identify and quantify all gamma-emitting radionuclides. These devices operate non-invasively (no drilling or other physical penetration of the ground) by being moved across the surface of the ground while taking remote readings. The devices may be between an inch and 25-feet above the ground on a tripod or vehicle. Most of the radiological surveying will be done on a 25-foot grid, though the size of the grid will be reduced where elevated radiation levels are encountered. Surface wipe samples will be obtained by rubbing a moistened filter paper over a specified area of the surface being sampled. The filter paper is then sent to a laboratory for analysis.

Hydraulic probes are small-diameter (typically 2-inches) vehicle-mounted rods that are forced into the ground under hydraulic pressure, similar to the probes used in soil gas surveys. Various measuring devices can be mounted on the probes to measure subsurface conditions. Probe-mounted, vertically-nested tensiometers will be used to measure soil water pressure.

Sediment sampling is done by using a small, hand-held container to remove sediment from the bed of drainages.

B. Total Estimated Cost: \$3.4 million

Checklist

YES NO

VII. Statutes applicable:

A. Will the project require or potentially require an application for permit or permit modification under:

1. Clean Air Act?

___ X

2. Clean Water Act?

___ X

B. Does the project involve RCRA permitting? (if "no", skip to C)

___ X

1. Will a RCRA permit or modification be required?

2. Does the project include a removal?

3. Does project include RCRA closure?

- partial?

- full?

4. Does project include excavation or capping to meet RCRA requirements?

5. Will cost and duration stay within \$2 million and 12 months? (Explain in project description.)

C. Does the project involve CERCLA? (if "no", skip to D)

___ X

(see Note 1)

1. Does project include CERCLA removal?

2. Will cost and duration stay within \$2 million and 12 months? (Explain in project description.)

D. Does the project threaten to violate statutory, regulatory, or permit requirements, or DOE Order?

___ X

E. Will the action be in or near a SWMU?

X ___

(see Note 2)

F. Does the project potentially impact threatened & endangered species or habitat, the Migratory Bird Treaty Act, or Fish and Wildlife Coordination Act?

X

VIII. Will this project construct or require a new or expanded waste disposal, recovery, storage or treatment facility?

___ X

| | | <u>YES</u> | <u>NO</u> | |
|-------|--|-------------|-------------|--------------|
| IX. | Is project needed for IAG, AIP, FFCA, or other federal or state agreement? (Specify and explain any schedule urgency and deadlines in project description.) | <u>X</u> | <u> </u> | (see Note 3) |
| X. | Is the project: | | | |
| | A. new process, building, etc.or | <u> </u> | <u>X</u> | |
| | B. a modification to an existing? | <u> </u> | <u>X</u> | |
| | C. capital equipment/machinery installation? | <u> </u> | <u>X</u> | |
| XI. | Location Items: | | | |
| | A. Will the project result in, or have the potential to result in, long term changes to the environment? | <u> </u> | <u>X</u> | |
| | B. Will the action occur outside the security zone/protected area (i.e., outside Gate 8 at Post 100 and Gate 10 at Post 900)? | <u> </u> | <u>X</u> | |
| | C. Will the action take place in a wetland or floodplain? | <u> </u> | <u>X</u> | |
| XII. | Will the project result in changes and/or disturbances of the following existing considerations? | | | |
| | A. noise levels | <u> </u> | <u>X</u> | |
| | B. air emissions | <u> </u> | <u>X</u> | |
| | C. liquid effluents | <u> </u> | <u>X</u> | |
| | D. solid wastes | <u> </u> | <u>X</u> | |
| | E. radioactive wastes (including contaminated soil) | <u>X</u> | <u> </u> | (see Note 4) |
| | F. hazardous waste | <u>X</u> | <u> </u> | (see Note 4) |
| | G. mixed waste (radioactive and hazardous) | <u>X</u> | <u> </u> | (see Note 4) |
| | H. chemical or petroleum product storage | <u> </u> | <u>X</u> | |
| | I. water use (withdrawal of groundwater or diversion or withdrawal of surface water) | <u>X</u> | <u> </u> | (see Note 5) |
| | J. drinking water system | <u> </u> | <u>X</u> | |
| | K. sewage disposal system | <u> </u> | <u>X</u> | |
| | L. soil movement outside facility fences or beyond SWMU boundaries | <u>X</u> | <u> </u> | (see Note 6) |
| | M. site clearing, excavation, or other physical alterations to grade | <u>X</u> | <u> </u> | (see Note 7) |
| XIII. | Will the project threaten public health or safety? | <u> </u> | <u>X</u> | |
| XIV. | Will the project have possible effects on the environment which are likely to be highly controversial? | <u> </u> | <u>X</u> | |
| XV. | Will the project establish a precedent for future actions that will have significant effects, or represent a decision in principle about a future consideration? | <u> </u> | <u>X</u> | |
| | | <u>YES</u> | <u>NO</u> | |
| XVI. | Will the project be substantially related to other actions that have individually insignificant but cumulatively significant impacts? | <u> </u> | <u>X</u> | |

XVII. Will the project adversely affect federal, state, or locally designated natural areas, prime agricultural land, special water sources, or historic, archeological, or architectural sites?

— X

- Note 1: The site characterization work is to be undertaken pursuant to the provisions of RCRA and CERCLA, as well as DOE's Interagency Agreement with the Environmental Protection Agency and the Colorado Department of Health, to characterize sites which have been identified under CERCLA as having the potential to be sites where radioactive and/or hazardous materials may have been released to the environment.
- Note 2: Virtually all the field work will be in or adjacent to SWMUs since the purpose of the activity is to identify the nature and extent of contamination of certain SWMUs/IHSSs.
- Note 3: Each of the three field sampling programs is an integral part of activities that are milestones under the IAG. Each of the field sampling programs is included within the IAG schedules.
- Note 4: The soil sampling, sediment sampling and borehole drilling activities could produce samples or spoils that contain hazardous and/or radioactive contaminants. All samples will be sent to laboratories for analysis. Spoils (from drilling activities) will be shoveled into drums and left at the site until they can be characterized and appropriately disposed of.
- Note 5: Small amounts of water (quarts) will be withdrawn from the wells that are to be drilled so that their constituents can be analyzed as part of the program to determine the nature and extent of contamination.
- Note 6: Soil samples will be sent to off-site laboratories for analysis. Drilling spoils will be held for proper disposal, possibly off-site, if they are found to contain contaminants.
- Note 7: The only "excavation" associated with these projects are the drilling of boreholes and wells and the taking of soil and sediment samples.

EC Prepared by: Bill Moore

Date: September 9, 1992

Organization: END

Bldg: 080

Extension: 8599